REMARKS

I. Status of the Application

Claims 1-28 have been withdrawn pursuant to a restriction requirement without prejudice to their being filed in a continuation application. Claims 29 and 34 stand rejected under 35 U.S.C. § 102(e) over U.S. Patent No. 4,548,876 to Bregoli. Claims 29, 32-34, 37, and 38 stand rejected under 35 U.S.C. § 102(a) over International Publication WO 99/13522 to Jaffrey. Claims 32, 33, 37 and 38 stand rejected under 35 U.S.C. § 103(a) over Bregoli and U.S. Patent No. 4,855,193 to McElroy. Claims 30, 31, 35, and 36 stand rejected under 35 U.S.C. § 103(a) over Jaffrey. Claims 29-38 have been amended. Claims 30-33 and 35-38 have been amended in non-limiting fashion to correct typographical errors.

The foregoing amendments in view of the following remarks are believed to place all pending claims of this application in condition for allowance. Accordingly, reconsideration of the application and allowance of claims 29-38 as now submitted is respectfully requested.

II. Claims 29 and 34 Are Novel Over Bregoli

Claims 29 and 34 stand rejected under 35 U.S.C. § 102(e) over U.S. Patent No. 4,548,876 to Bregoli. This rejection is respectfully traversed.

Bregoli discloses a fuel cell structure having a cathode 24, an anode 28, an electrolyte 26, a separator plate 12, a metallic electron collector 14 on the cathode, and a metallic electron collector 30 on the anode.

Bregoli fails to disclose or make obvious a subassembly having a cathode, a plurality of cathode current collectors contacting the cathode, an anode, and a plurality of anode current

collectors contacting the anode, with at least one of the plurality of cathode current collectors and the plurality of anode current collectors being flat wires, as required by independent claims 29 and 34.

Bregoli simply fails to disclose any flat wires that contact either its cathode or its anode. The metallic electron collectors of Bregoli are corrugated. Accordingly, the rejection is improper and should be withdrawn.

III. Claims 29, 32-34, 37, and 38 Are Novel Over Jaffrey

Claims 29, 32-34, 37, and 38 stand rejected under 35 U.S.C. § 102(a) over International Publication WO 99/13522 to Jaffrey. This rejection is respectfully traversed.

Jaffrey discloses a fuel cell assembly having a cathode 18, an anode 16, an electrolyte 32, and separator plates 22, 122. A mesh conducting layer 136 is in contact with cathode 18, and a mesh conducting layer 144 is in contact with anode 16. Jaffrey fails to disclose or make obvious a subassembly having a cathode, a plurality of cathode current collectors contacting the cathode, an anode, and a plurality of anode current collectors contacting the anode, with at least one of the plurality of cathode current collectors and the plurality of anode current collectors being flat wires, as required by independent claims 29 and 34.

The mesh conducting layers 136, 144 of Jaffrey are not flat wires, and it would not have been obvious to one skilled in the art to replace the mesh layers of Jaffrey with flat wires. Jaffrey, in fact, specifically teaches away from the use of flat wires:

> This requirement for flat or well matched surfaces is difficult to achieve in practical fuel cells without recourse to expensive and tightly controlled machining or surface preparation methods. Holding these surfaces together as the temperature in the fuel cell rises or falls is also difficult since the thermal expansion characteristics are very difficult to match perfectly with the various materials of construction. (Page 2, lines 16-18.)

Further, with respect to the use of flat materials, Jaffrey states that

the conductive layer may be able to selectively distort or comply under typical loads applied during use and thereby permit the use of fuel cell assembly components which are not highly flat, parallel, smooth or accurate. (page 4, lines 6-8).

Accordingly, not only would it not be obvious to one of skill in the art to replace the mesh layers of Jaffrey with flat wires, such a person would be taught by Jaffrey that such an approach would not be effective.

Consequently, the rejection is improper and should be withdrawn.

IV. Claims 32, 33, 37, and 38 Are Patentable Over Bregoli and McElroy

Claims 32, 33, 37 and 38 stand rejected under 35 U.S.C. § 103(a) over Bregoli and U.S. Patent No. 4,855,193 to McElroy. McElroy is cited as teaching a ribbed separator. This rejection is respectfully traversed.

McElroy discloses a fuel cell having an anode 6, a cathode 8, an ion transporting membrane 4, and separator plates 16, 18. The separator plates have ribs 32 that serve to form flow fields 12 and 20.

McElroy fails to overcome the deficiencies of Bregoli and Jaffrey noted above. Specifically, McElroy fails to disclose or make obvious anode or cathode current collectors that are flat wires. McElroy simply fails to disclose any flat wires. Accordingly, the rejection is improper and should be withdrawn.

V. Claims 30, 31, 35, 36 Are Patentable Over Jaffrey

Claims 30, 31, 35, and 36 stand rejected under 35 U.S.C. § 103(a) over Jaffrey. This rejection is respectfully traversed.

The Office Action states that Jaffrey is different from the pending claims in that Jaffrey does not describe the wire current collector having a planar surface contactable with the separator. The Office Action further states that it would have been obvious to modify the expanded metal mesh disclosed in Jaffrey to have a flat contact area.

As noted above, not only would it not have been obvious to modify the metal mesh of Jaffrey to have a flat contact area, Jaffrey specifically teaches away from the use of flat materials. Accordingly, the rejection is improper and should be withdrawn.

VI. Conclusion

In view of the foregoing amendments and remarks, pending claims 29-38 are believed to be allowable, and an indication to that effect from the Examiner is respectfully requested at this time. If a telephone conversation with applicant's attorney would expedite prosecution of the above-referenced application, the Examiner is urged to call the undersigned at the number below.

Please apply any required charges or credits to our Deposit Account No. 19-0733.

Respectfully submitted,

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